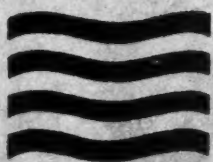


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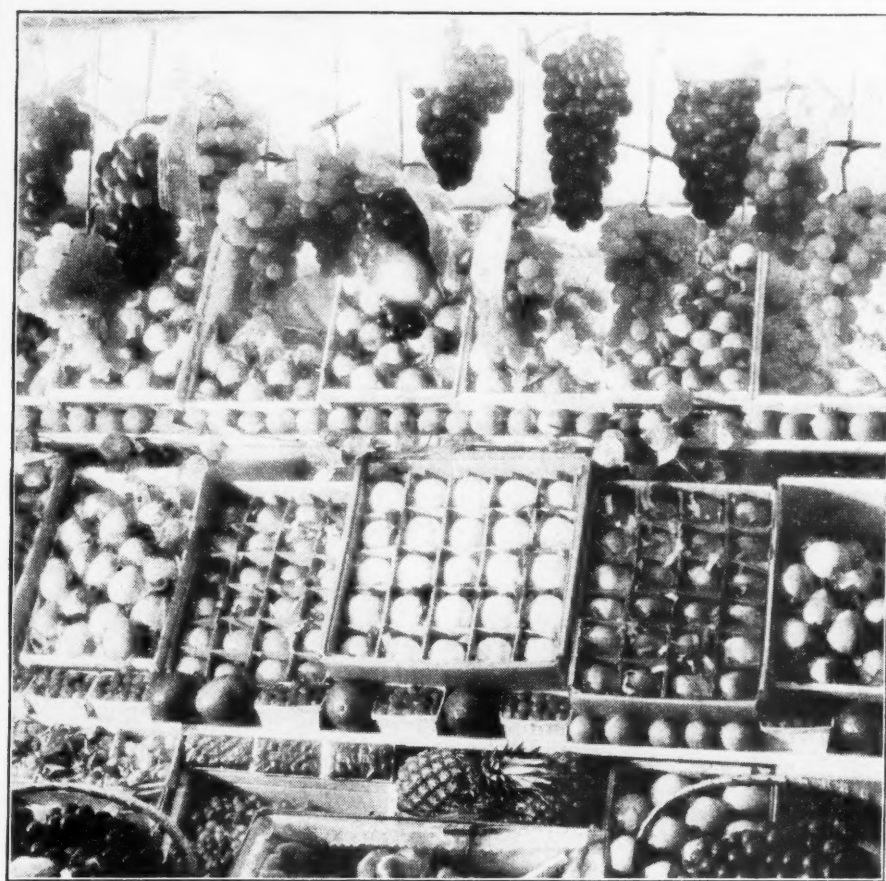
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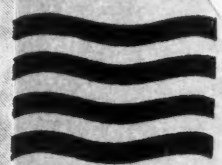
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These Packages Help to Sell the Fruit (Page 8)

A NEW DEAL FOR THE AMERICAN FRUIT GROWER
THE APPLE SPRAY RESIDUE SITUATION
A BONUS FOR FRUIT GROWERS
MODERN PACKAGING FOR EXTRA PROFITS



TEN
CENTS
A COPY

Protection Without Residue

For seven years "Black Leaf 40" has been tested against codling moth. Results have appeared in official reports and are summarized as follows:

1 Nicotine-Oil has consistently equalled lead arsenate in the control of codling moth.

2 In addition, it has controlled the various aphids, leaf-hopper, mites and crawling young scale.

3 It has produced better color on red varieties of apples.

4 Better foliage resulted in increased size of fruit at harvest and in a higher percentage of fancy fruit.

5 Nicotine-oil met the situation and is approved by Federal and State authorities.

How "Black Leaf 40" Controls Codling Moth

"Black Leaf 40" kills codling moth eggs and is particularly effective against the later stages of the eggs. It may, in fact, be called an "embryocide." When eggs which escape the treatment do hatch, the tiny larvae must crawl over a nicotine film on the foliage and fruit, from which nicotine fumes are evaporating. *These fumes, plus the direct contact of the bodies of the tiny worms with the film, kill the worms before they start feeding.* Under normal conditions, when "Black Leaf 40" is used with "summer-oil," the nicotine film persists in toxic form on the foliage and fruit for about eight to ten days. With mineral poisons, the worms injure and scar the fruit before they eat enough poison to be killed—causing "stings"; for they must eat the fruit to get the poison. On the other hand, "Black Leaf 40" with "summer-oil" kills both the eggs and larvae by "contact" before feeding starts.

Cost Per Tree vs. Cost Per Bushel

To help meet the situation, "Black Leaf 40" prices in large sizes have been greatly reduced. Depending upon the dilution used, the "Black Leaf 40" 50-pound drum makes from 4,000 to 8,000 gallons of spray. When figuring costs, remember that freedom from residue (either arsenic or lead), the effect upon insects (codling moth, aphids, leaf-hopper, young scale, mites, etc.), safety to foliage and increase in grade or quality, are primary factors. Use the spray-program that gives the best yield and pack of the higher grades.

.. Spray Apples with



for Late Cover

Codling Moth Control

It kills codling moth yet does not leave residue. Also, "Black Leaf 40" kills Mites, Young Scale, Aphids and other insects. "Black Leaf 40" is the world's leading nicotine sulphate spray, completely standardized and always reliable. Consult your Experiment Station, County Agent or Farm Advisor for recommendations of "Black Leaf 40" against codling moth.

Federal and State Authorities are recommending oil-nicotine sulphate combination sprays after July 1. "Black Leaf 40" has been tested and used for seven years at State and Federal Experiment Stations. Why experiment with unproven materials and methods?

Forget residue and fight to kill the codling moth! Put "Black Leaf 40" in your spray program. Have protection without residue.

Apple Growers cordially invited to correspond with us for literature on using "Black Leaf 40" against codling moth.

TOBACCO BY-PRODUCTS & CHEMICAL CORPORATION, INCORPORATED
Louisville, Kentucky

AMERICAN FRUIT GROWER

(Title Registered in U. S. Patent Office)

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Editor-in-Chief

DEAN HALLIDAY

Managing Editor

BENJAMIN WALLACE DOUGLASS

MARY LEE ADAMS—T. J. TALBERT

Associate Editors

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A NEW DEAL for the AMERICAN FRUIT GROWER

THE AMERICAN FRUIT GROWER, founded by Samuel
Adams, is again owned by the American Fruit Grower Publish-
ing Company and under an entirely new management and a
new Editorial Staff announces a NEWER—BIGGER—BET-
TER MAGAZINE.

The huge industry of commercial orcharding, including both
growers and shippers of deciduous and citrus fruits, is entitled
to be adequately served by a national publication circulating
the news of the Fruit World in all the great fruit belts of the
country—

—Because America leads the world in fruit growing and
fruit consumption—

—Because it is the leading exporter of both fresh and
canned fruits—

—Because the national income from fruits and nuts ex-
ceeds that of wheat, corn, oats and many other farm
crops.

The new Editorial Staff of the American Fruit Grower is
composed of a balanced group of national authorities whose
purpose is to give readers the latest scientific discoveries, the
news of all commercial fruit belts and to keep growers, nursery-
men, horticulturists, shippers and packers of fruit informed of
the latest and most important developments within the industry.

The NEW DEAL for the AMERICAN FRUIT GROWER
will be reflected in a GREAT INAUGURAL ISSUE for Octo-
ber at which time the magazine will resume publication of
monthly editions. Watch for it—for this great NEW AMER-
ICAN FRUIT GROWER will contain the best, most important
and up to date information on all phases of fruit production and
marketing.

E. G. K. MEISTER,
President and Publisher

WHO'S WHO IN THE NEW AMERICAN FRUIT GROWER



JOHN T. BREGGER
Editor-in-Chief

WE take pleasure in presenting Mr. John T. Bregger as the Editor-in-Chief of the new AMERICAN FRUIT GROWER. Under his editorial direction the pages of the AMERICAN FRUIT GROWER will bring you all that is best, most practical, latest and authentic about fruit growing.

Mr. Bregger knows fruit from actual commercial growing as well as from the standpoint of the scientist in the laboratory. His field work as well as his scientific research in various parts of the country give him a national perspective on the industry that will make his editorials and articles in coming issues of the AMERICAN FRUIT GROWER have special importance and value to every grower.

Mr. Bregger graduated from Michigan State College in 1917, with an M.S. from Cornell in 1922. At one time he taught Botany at the Oregon State College, worked for the U. S. D. A. in plant disease surveys in both Michigan and Oregon. He then spent a year in Alaska as Horticulturist of the Alaska Experiment Station. In addition, to these scientific phases of his experience, Mr. Bregger has also found time to get the actual field viewpoint by serving as foreman of a Citrus Nursery in California as well as representing the Stark Brothers Nurseries for four years as head of their Special Service and Orchard Research Department. This connection led him in 1927 to Sebastopol, Calif., as Sup't of the Luther Burbank Exp. Farm, where he described and cataloged the hundreds of new fruit varieties, left to the world by Luther Burbank at the time of his death. He has just completed a year at Cornell as Visiting Professor in Pomology after serving for three years as Extension Horticulturist at Washington State College.

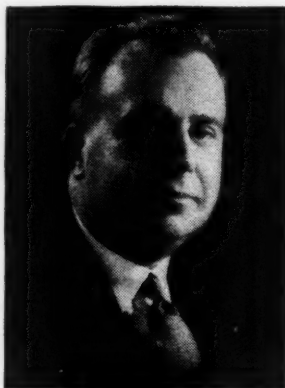
In the past ten years, as many readers will remember, Mr. Bregger has contributed frequently to the pages of the AMERICAN FRUIT GROWER as well as to many other horticultural magazines.

MORE than twenty years in the publishing business, much of that time connected with the AMERICAN FRUIT GROWER, gives a background of greatest value to E. G. K. Meister as the new President and Publisher of this magazine. Imbued with the highest principles of publishing Mr. Meister is determined, in the new AMERICAN FRUIT GROWER, to give to the industry of commercial orcharding a publication that fairly, fearlessly and completely represents that field. To the traditions that have made the AMERICAN FRUIT GROWER famous for the past fifty years he will add progressive policies, a modern viewpoint and a NEW DEAL that will make the magazine of greater importance than ever before to its readers and to its advertisers.



E. G. K. MEISTER
Publisher

AS Managing Editor Dean Halliday brings worldwide publication experience to the new AMERICAN FRUIT GROWER. During his early training in the newspaper field Mr. Halliday served on the editorial staffs of the *Chicago Tribune*, the *San Francisco Call* and the *New York Evening Sun*. In 1913 he was called to Japan to help establish an English printed weekly magazine, later serving on the staff of Japan's famous English printed daily, the *Japan Advertiser*. Mr. Halliday has written for newspapers and magazines in this country and abroad and is one of the founders, and Editor, of *Your Garden and Home Magazine*.



DEAN HALLIDAY
Managing Editor



BENJAMIN WALLACE DOUGLASS

ONE of the outstanding features of the new AMERICAN FRUIT GROWER will be a page in each issue containing a message from Benjamin Wallace Douglass, famous philosopher of the fruit growing industry. Mr. Douglass has

the unique experience of being both a fruit grower and a writer of national prominence. For a great many years he contributed to the pages of the *Country Gentleman*. Now his kindly, yet trenchant pen will write a message each month for readers of the AMERICAN FRUIT GROWER. On his page Mr. Douglass will pen the "human side" of fruit growing.



MRS. MARY LEE ADAMS

the new magazine. As the wife of Samuel Adams, founder of the magazine, as one of its most popular writers and as proprietor of a fruit farm, Mrs. Adams has been identified for many years with the AMERICAN FRUIT GROWER. In the new AMERICAN FRUIT GROWER Mrs. Adams will once more contribute her helpful articles.

WOMEN readers of the AMERICAN FRUIT GROWER, and many men also, will remember the common sense messages of Mrs. Mary Lee Adams and will welcome her return as Household Editor of

THE wide awake fruit grower who is ever alert to the "whys" and "wherefores" of his business will be glad to know that in the new AMERICAN FRUIT GROWER the "Question and Answer" Department will continue to be conducted by Mr. T. J. Talbert. As Professor of Horticulture in the College of Agriculture of the University of Missouri, Mr. Talbert's many contacts with almost every phase of fruit growing gives him an experience that is particularly helpful in answering the questions raised by readers of this magazine in a practical way easily understood by the man in the orchard.



T. J. TALBERT

THE APPLE SPRAY RESIDUE SITUATION

JOHN T. BREGGER

PROBABLY at no other time in the history of fruit growing have spraying practices undergone a more decided evolution than is taking place at the present time. The mid-point of the 1933 spray season has arrived with many growers not knowing which way to turn. Nor is there any higher authority who can tell them just what to do.

The problem which is being faced by the fruit grower today is not new. It simply has several new aspects. New pests and new conditions have always kept the grower changing his practices, but today that is more true than ever.

Probably the outstanding phase of the spraying problem of today is the question of using lead arsenate. From the standpoint of pest control, this chemical is superior to all others now known; still it is not the perfect insecticide for which we have been diligently searching many years. It has, for instance, a certain amount of toxicity, which has caused some foliage burning in hot weather, particularly on peach trees when not properly combined. Because lead arsenate sticks well to the fruit and is a good insecticide, it is also somewhat difficult to again remove from the fruit when applied late and in large amounts.

Increased pest problems, requiring longer spray programs and meeting the federal regulations of a lower arsenic and a new lead tolerance, are presenting to the fruit grower a new situation which he must face almost overnight. This is no small hardship, as in some cases it might mean the junking of materials already purchased, the purchase of new equipment, or sacrificing the highest quality of his crop.

Not all fruit growers are facing the same phase of this problem. Roughly we can divide these growers into three classes:

First: Those who through northern or otherwise favorable locations have not in the past nor present a serious enough pest problem to warrant a spray program which would give objectionable residues in the light of existing regulations. Second: Those whose spraying problems due to heavy codling moth infestations have necessitated washing practices for several years, but for whom the newer tolerances simply mean the modification of present washing practices. Third: Those growers whose spray problem lies midway between the first two classes; who during the past years have not had residue problems, but now have increased or new pest outbreaks necessitating a spray program which will leave residues, which until now have not exceeded the prescribed tolerances. It is this class of growers which is meeting the brunt of the new conditions. These growers must act quickly in many cases or be prepared to meet serious losses.

The latest federal regulations on residue tolerances are as follows:

Arsenic01 grains per pound of fruit
Fluorine01 grains per pound of fruit
Lead02 grains per pound of fruit

The arsenical residue even at the .01 tolerance is now an old story to most fruit growers and they know how to meet it. Where fluoride compounds are used, no particular problem of residue removal has been met. With the new lead tolerance, however, there is a distinctly new problem to all growers. To even the experienced washer, the old methods have suddenly become out-of-date, because present

washing solutions do not remove lead in the same proportion that arsenic is removed, and unfortunately not meeting the existing tolerance. This means one of two things, either lead substitutes must be used in such spray programs, or revised washing solutions must be found which will satisfactorily remove the lead residue.

In all parts of the country our state, federal, and commercial investigators are working on washing solutions from all possible angles. Already the New Jersey Experiment Station has announced a promising addition to the acid wash in the form of a wetting or degumming agent which they claim will increase the lead removal. (It still remains to be seen how this will affect the keeping quality of the fruit.) Other experiment station workers claim to be getting better results with calcium arsenate than ever

before, partly due perhaps to a higher grade of this chemical than has been available up to the present season. Another arsenic compound showing some promise is Manganese arsenate.

A well known substitute for lead arsenate, and one used particularly in the Northwest for late season applications, is the oil-nicotine combination. This shows a high efficiency in codling moth control, largely because of a 90% egg-killing power in addition to its insecticidal properties. The oil-nicotine combination leaves no residue on the fruit. One warning must be made concerning its use, however, and that is it must not be applied too soon following a sulphur application, since some foliage burn might result under such circumstances. In hot weather, the elapsed time between the application of a sulphur spray and oil-nicotine is much shorter than during colder periods.

By the end of the present season, we will have through the experimenters and the experiences of the growers themselves a vast amount of data on these newer materials, when used under all kinds of conditions and in various combinations. Until such time, however, each grower must size up his own individual case and use his best judgment with the knowledge which is now available.

In general there are three gradations in the way fruit growers will react to the residue regulations. In the areas



For effective spraying with any insecticide much depends upon the man behind the gun.

where pest control problems are not acute, most growers will undoubtedly attempt to meet this year's inspection requirements with a minimum amount of spraying, taking some chances on insect injury. On the other hand, some of the small growers with more serious pest injury and a heavier spray program are considering the use of home-made fruit washers such as are already in use to some extent in New Jersey. For the larger growers, and for smaller growers using central packing plants, however, the most promising solution at the present time seems to be the use of commercial washing machines.

The evolution of fruit cleaning has been rapid and interesting. Beginning with hand wiping, the mechanical wiper and polisher soon followed. Later, washing was substituted for dry wiping, at first by soaking in vats which involved rinsing and drying, both troublesome and time-consuming operations. Following this, the mechanical washer appeared on the market, a machine which combines the emersion, rinsing, and drying in one operation. The most recent improvements have resulted in very efficient washing machinery of this type.

While washing machinery has become almost standard equipment in the packing houses of the great Northwest, it is still far from common in the East and Middle West. The commercial growers in New Jersey appear to have been the first to use washing equipment in the East, dating back to 1927. The following year, apples were washed in the Ozark district, where codling moth and residue problems had become practically as severe as they were in the Northwest. Fruit washing received its first attention in more northern parts of the Middle West during the winter of 1929, at which time the domestic tolerance was reduced to .015 and further reduction to the foreign tolerance of .01 became practically assured.

Michigan was the first state east of the Rocky Mountains in which a commercial washer was installed. The following year (1930), washing equipment was used by several cooperatives in both Michigan and Illinois to be followed by others in Indiana, Kentucky, and a few other states. About the same time the growers of Virginia, in meeting the requirements of an export market and finding cloth wipers and brush polishers unable to cope with the situation, purchased over 40 commercial fruit washers for immediate use. To the north, however, where the codling moth problem was much less severe, commercial washing machinery is still very scarce, and in some districts almost unknown. In the state of New York for instance, up to



Shown in operation above is an Intermediate Model C Packing House Washer having a capacity of 1,200 to 1,800 bushels per day. The machine pictured above is installed in the Packing House of the Benton Harbor Fruit Exchange at Benton Harbor, Michigan. The fruit is delivered from the Washer to the Grader for the balance of the grading and packing operations.

the current year, less than a half dozen standard washing machines have been in use and only a few growers have brushing outfits.

The future of fruit washing depends upon many factors, mainly upon the trend of spraying methods and the materials used. In the light of most recent developments, it is very evident that the use of fruit washers will increase. At the start, new or additional practices invariably dishearten and discourage a great number of growers. It naturally involves some additional expense, which is difficult to meet at a time when commodity prices are low.

After these adjustments are made, however, and become a permanent part of the fruit growers' program, they cease to have all the sting they once had. Growers everywhere are getting more and more the consumers' point of view, and since fruit washing frees it of dust and other types of impurities in addition to the spray residue, washed fruit really is a better and more attractive product from the standpoint of the consumer. Thus in making his product reach the consumer in the best possible condition, the fruit grower is adding to his success as a producer by increasing the consumption of his product.

NITROGEN FERTILIZERS STILL PAY DIVIDENDS

AT the present time nitrogen fertilizers are proportionately lower in cost than anything the fruit grower has to buy. The benefits from nitrogen are numerous and varied, but the most important have to do with increasing yields. This comes about largely through one direct and one indirect effect. The direct effect is an increase in set of fruit, while the indirect effect is an increase in size of fruit, largely as a result of increase in amount and vigor of foliage.

Decreased production costs are largely gained by yield increases. Through the use of sufficient nitrogen fertilizer to maintain an annual terminal growth of at least ten inches, a vigorous dark green highly efficient foliage will result, making it possible for the trees to bear larger crops of

fruit in the present and subsequent years.

The more common nitrogen fertilizers at the present time are nitrate of soda, calcium nitrate, sulfate of ammonia, cyanamid, and barnyard manures, enumerated in order of their quickness in availability.

Applications of a nitrogen fertilizer should be made at least two weeks ahead of blossoming, so as to increase the set of fruit by supplying nitrogen to the trees at the time of year when their demand is greatest and when there is normally a limited amount of available nitrogen in the soil. Many light sets of fruit have resulted this season from a heavy bloom accompanied by this shortage of available soil nitrogen.

THE NEW LEAD TOLERANCE AND HOW TO MEET IT

HARRY C. McLEAN

Chemist, Spray Residue Investigations, New Jersey Agricultural Experiment Station,
New Brunswick, New Jersey.

AN effective means of removing lead residues from fruit and vegetable produce has recently been developed in connection with the spray residue investigations conducted at the New Jersey Agricultural Experiment Station. It is of particular significance at this time, in view of the recent Federal restrictions limiting the lead tolerance to .02 grains of lead per lb. of fruit for the 1933 crop.

The tendency toward the use of oil combined with lead arsenate in the formation of protective sprays and the adoption of late spray schedules to combat insect pests has resulted in accumulation of heavy arsenic and lead residues at harvest. The reduction of such residues in compliance with the lead and arsenic tolerance has presented a difficult problem in certain sections of the United States. Various methods have been applied successfully in the removal of arsenical residues. The acid wash method employing hydrochloric acid on various concentrations at ordinary temperatures has proved entirely adequate in removing lead residue at time of harvest from New Jersey apples, in the absence of late oil lead arsenate sprays. Hydrochloric acid alone has not been effective with unwashed fruit which has become extremely waxy from prolonged storage. The use of alkaline washes such as trisodium phosphate, soda ash, etc., in heated solution has been practiced extensively in the Pacific Northwest.

Recent laboratory experiments conducted at New Jersey on western grown apples and confirmed by tests conducted at Yakima, Washington, on a commercial scale definitely prove that alkaline washes, although successful in removing arsenical residues fail to affect the removal of lead residues from heavily waxed or oil sprayed fruit. The introduction of a textile wetting or degumming agent such as "Vatsol" or "Alkanol B" in conjunction with hydrochloric acid was found to greatly increase the efficiency of the acid wash in the removal of lead.

Various wetting materials were tested in combination with hydrochloric acid in the treatment of heavily oil-lead arsenate sprayed apples which had become very waxy from seven months' storage. Fruit grown in New Jersey as well as the Pacific Northwest was

included in these experiments. Several of such materials were efficient agents in removing residues from fruit having received late oil-lead arsenate sprays, but their effectiveness was greatly diminished in the presence of over matured fruit which had become excessively waxy. The most promising of these materials is "Vatsol," a textile wetting and degumming agent produced in the form of a paste.

The method devised by the New Jersey Station employs a mixture consisting of 5 gallons of 20° Baume hydrochloric acid and 8 lbs. of "Vatsol," to each 100 gallons of water. In the treatment of oil-lead arsenate sprayed but not excessively waxy fruit, "Alkanol B," proved a satisfactory substitute for "Vatsol" when used at the rate of 4 lbs. of the dry powder per 100 gallons of water.

In contrast to alkaline washes which tend to leave the fruit dull and cloudy in finish, the introduction of the wetting or degumming agent in the acid wash enhances the appearance of the fruit. Moreover, there is considerably less danger of spoilage from burning, since the solution is applied at ordinary air temperature (70° F.) and requires no heating to be effective as in the case of the alkalies formerly used for removal of arsenic. An inexpensive efficient method is thus provided which may successfully be adapted by the small fruit grower to homemade equipment without addition of heat.

The method has been applied commercially in New Jersey, using a 400 gallon capacity pre-dip tank. The fruit was allowed to remain in contact with the mixture for an interval of 1½ to 2 minutes, passing from the acid wash through commercial washers for final rinsing, drying and polishing. The As_2O_3 content was reduced to .005 grains per pound and lead to .014 grains by the addition of the degumming agent, whereas with the acid wash alone such residues could be reduced to but .03 and .072 grains per pound, respectively. With the equipment available it was possible to wash approximately 10,000 bushels of apples before the accumulation of soluble arsenic residues necessitated renewal of the cleaning mixture.

The estimated cost for removing lead

(Turn to page 11)

Spray Residue? Trouble!

**Vatsol in the washing
solution leaves fruit
well below Govern-
ment tolerance for
Lead.**

Here's news of a new product that definitely ends spray residue troubles. You can now use lead-arsenate on your regular spray schedule with complete confidence that the lead residue can be removed. As little as 8 lbs. of Vatsol in the standard Hydrochloric acid washing solution dissolves the gummy coating over the spray residue — cleans off both lead and arsenic well below the Government tolerance. Economical to use. Does not injure fruit in any way.

This new product has been thoroughly tested by the New Jersey State Agricultural Experiment Station at New Brunswick, N. J., and was in actual commercial use by practical fruit growers last season. Write for a description of the results secured as printed in the June issue of "Journal of Economic Entomology."

Distribution of Vatsol is now being arranged. Write for the name of the nearest distributor. Consult your County Agent or State Experiment Station. Detailed information on the use of Vatsol is being placed in their hands.

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VATSOL
MARK

**American Cyanamid
and Chemical Corp.**

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Kansas City, Mo.

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MODERN PACKAGING FOR EXTRA PROFITS

DEAN HALLIDAY

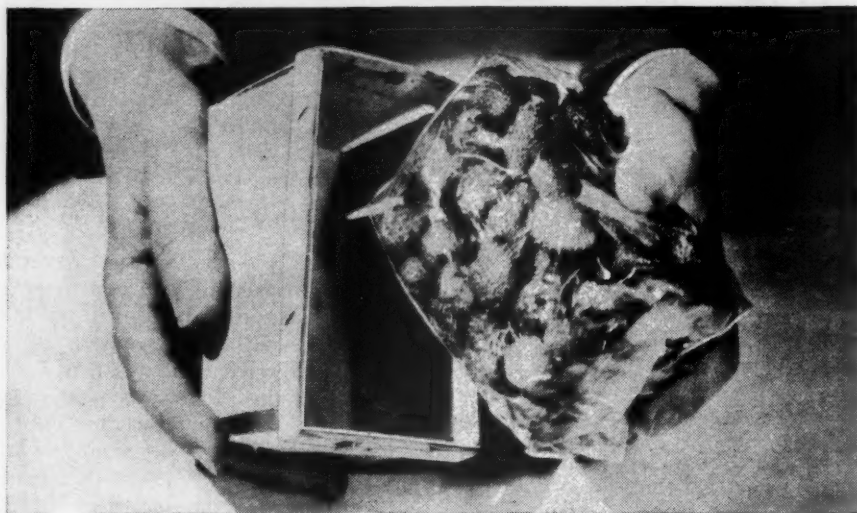
SCIENTISTS claim 83% of all impressions come through the eye. In other words, the brain of a potential buyer does not signal the hand to reach for the pocketbook until the eye has first been attracted, interested and "sold" by the appearance of the product offered for sale.

This is true of most commodities, and particularly so of apples. Yet the apple grower, although dealing in a commodity that lends itself to attractive display has been backward in doing anything about it. He has let the scientist show him how to grow beautiful fruit, but has not realized that still another type of scientist can show him better ways of packaging and selling this same fruit.

In other lines, from soups to nuts, from soaps to strawberries, the producers have been keen to see that modern merchandising methods make it possible, even in these times to sell more goods at better prices.

The man who creates containers in these days is no longer merely a carpenter concerned with utility, a box or bag maker concerned only with cost. He is a "sales scientist" whose research in the markets of the world, show what is the right and what is the wrong way to try to sell goods. His findings can be accepted in these days with the same assurance that the findings of the scientist in the laboratory are accepted.

In recent years the makers of containers of one kind and another have had the assistance of leading mer-



A modern adaptation of a new wrapping material with "eye appeal." The Elkin Cellophane Pack for strawberries protects, displays and helps sell the fruit.

chandising experts, of noted psychologists and famous artists. Into the designing of a package or container has gone an expert knowledge of buying habits, or mental quirks, of the relationship of form and color and of the combined effect upon the purchaser's sensibilities and pocketbook. Where new materials would serve better, the old have been discarded. Transparent cellophane takes the place of unsightly butcher paper, and cardboard of wood. Since in a great many cases "seeing is selling," the modern container combines packing and carrying convenience with enticing display. What does it matter if packing costs have increased slightly since it will more than be made up in the price the apples command?

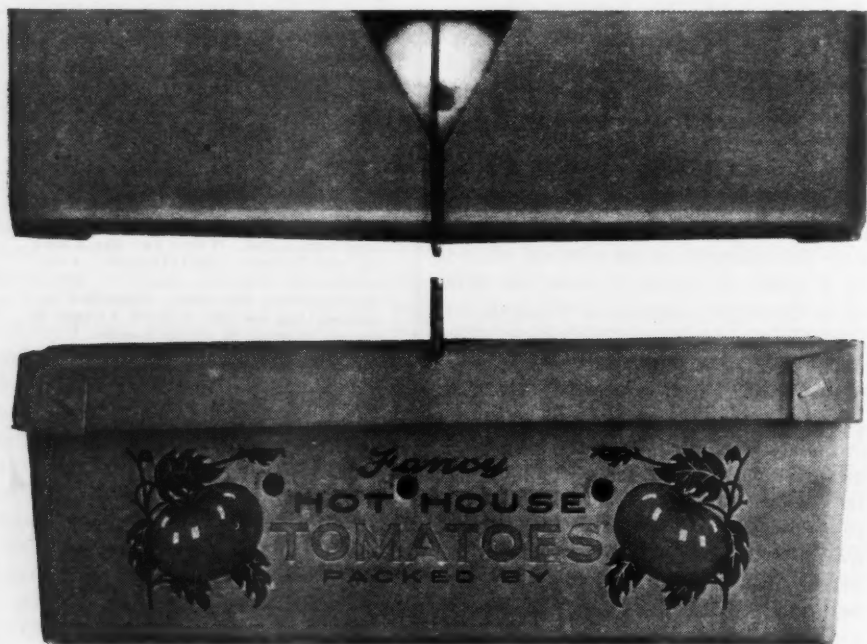
A perfect apple, in itself, is an object

of beauty. Certainly no other food product boasts of more eye appeal. Why not enhance this appeal by attractive as well as convenient packaging? What progress is being made in this respect is due largely to the enterprise and ingenuity of the manufacturers of corrugated paper boxes and baskets. Manufacturers in various parts of the country have produced paperboard shipping cases and baskets which meet all the packing and protection requirements of the grower and in addition present definite eye appeal to the buyer. Fruit packed in these modern containers show practically no bruises and to retailers who specialize in fancy grades, this is a matter of great importance.

There are paperboard baskets on the market now which permit apples to be packed firmly, yet without damage. Such baskets have a paperboard cover which rests on a patented check strip that enables the baskets to pile easily without damaging the fruit. The paperboard cover is also cut away in the center to allow display of the fruit inside and thus add to its sales appeal.

Paperboard boxes in both large and small sizes with the fruit packed in individual nests also are the result of the application of modern merchandising methods to fruit shipments and sales. Even though such paperboard packaged fruits may cost 50 cents to 75 cents more per package wholesale, loss from spoilage and waste is reduced so materially by the packaging that the extra cost is saved many times over. The importance of this is shown by the fact that one well known retailer in a metropolitan city recently declined to

(Turn to page 13)



Here is a modern paperboard basket made up for tomatoes that could just as well be carrying, advertising and selling apples.

BENJAMIN WALLACE DOUGLASS DISCUSSES—

A BONUS FOR FRUIT GROWERS

SOME one, (I think it was Frank Waugh), once said, "Fruitgrowing is more than a business, it is a mode of life."

I always wished that I had been smart enough to think up that remark because, to me, it means such a lot.

Fruitgrowing IS a business. A very big business involving a tremendous lot of people who do interesting things and handle large sums of money.

It is a business that gives employment to thousands even outside its own ranks—men in industry, mines, factories, trains. These men make the chemicals, the spray machines, the barrels, boxes, baskets, paper and a thousand and one other items that a fruitgrower has to buy.

If the fruit business of this country were wiped out of existence a lot of other businesses would be wiped out along with it and thousands of men would be left with no means of earning their daily bread.

But the business of actually growing the fruit is the part in which we are really interested because that is the part we do ourselves.

Our business consists of planting trees, making them grow and eventually seeing them bloom and fruit.

There is a lot of hard work to it from start to finish. It is not so easy to take a spade and dig holes for young trees. It is scarcely a picnic to cultivate and prune and spray. It is a back breaking job to pick apples and handle heavy baskets and crates all day long.

It is hard work any way you look at it but the real fruit grower loves every minute of it and he would not trade his job with any other man on earth.

That is because all this hard work really is more than a business—it truly is a "mode of life."

Brick masons, carpenters, factory workers, lawyers, doctors, printers—all live very much the same kind of lives.

Each day, if they have a job at all, they go about their business of working with the material that brings them a living. They handle bricks, lumber, steel, human lives or what not.

At the end of the day they lay down their tools and material and forget all about it until the next morning. They have earned their pay and their job can give them nothing else. It is a very dead sort of job.

At the end of the fruitgrower's day he has, perhaps, earned his pay. (He is not very much concerned if the pay be small.)

When I speak of pay I am thinking of cash but in the case of the fruitgrower there is something more than pay. There is a bonus that he gets that was not reckoned in when the job was let. He probably did not know anything about it when he started growing fruit. All he expected to do was to produce fruit and sell it at some sort of profit, so that he could buy food and

shelter and educate his children. The bonus just sort of slipped up on him before he realized it.

Possibly he discovered it for himself first one crisp fall day when he went through his apple orchard and saw clearly the first ripening fruits of his labors. In the October sun he saw a gleaming red apple, large, perfect and with a skin as smooth and polished as a gem. Suddenly he realized that here was something that had come about in the world as the result of his labors—something fine and perfect that had not existed a year ago. He realized, too, that this perfect apple was above price and, although he would have to sell it, he knew that no amount of money could take from him the joy and satisfaction which that apple had brought him. All that the customer could buy would be the fruit itself—the grower kept as his own the memory of something very perfect. And it was a memory that no one else could have—unless he himself, as a fruitgrower, could create similar perfection.

Or the grower might have realized that there was a bonus in his job on some bright spring morning when he wakened with the fragrance of plum blossoms blowing in at his bedroom window. He had not known about plum blossoms before. He had supposed that the trees just bloomed like any other trees and that was all there was to it. But, after that first morning of discovery he would find himself looking forward each spring to another morning when his plum trees should tell him that the year was at last alive.

But, not all of this bonus which the fruitgrower gets is quite like that. Part of it is rather stern and severe, yes, at times even tragic and yet I like to think of it as a bonus. Whether it is or not must depend, I imagine, largely upon the individual.

There may come a time when the orchard blooms so lavishly that one is almost overwhelmed with the promise of material riches that it brings. Then, over night perhaps, all that lavish promise, all of that display of physical beauty is wiped out by frost. It is a discouraging prospect. I have known some fruitgrowers who were overwhelmed by it. I think they were not true fruitgrowers to begin with. Had they been they would have accepted their loss in the philosophical manner which men learn from just such losses and go ahead, bravely, looking forward to another year.

I like to think that even a fruitgrower's loss is his gain. Not, of course, a gain for his bank account but a gain for his spirit and I wonder sometimes if anything else really matters.

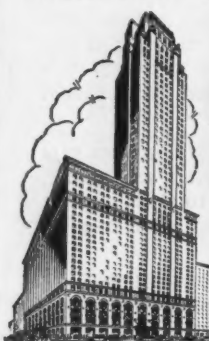
In recent months bank accounts have not meant much. Great fortunes have been wiped out and some of the formerly big figures in high finance have met the situation only by jumping out of a high window.

I wonder who was the richer, the man who made a fortune out of paper or the grower of fruit who managed to supply shelter and food and an education for his children and who had as his bonus a free gift of glorious beauty and a strength of spirit untouched by adversity. It seems to me the rich man was very, very poor.

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325 W. D., Galesburg, Mich.**MARY LEE ADAMS
TALKS ABOUT COTTON**

THE return of cotton to style is one of the features which economists welcome as a hopeful factor in industrial recovery. Whether this has been wholly inspired by the patriotic zeal of women, who, at their country's call, deliberately sacrificed their preference for silk attire, or whether the fickle creatures were just ready for a change anyway, we need not inquire too closely. The result is satisfactory.

Cotton has come up over the fashion horizon. It is climbing to the zenith, dissipating in its dazzling course, the clouds of wool, silk, linen and rayon which were said to obscure our sun of prosperity. Morning, noon and night, at breakfast, luncheon, dinner, supper, tea, parties and even balls, cotton reigns supreme.

And how pretty the new designs are. How soft the voiles. How crisp the organdies. How smart in color and cut these new cotton garments are. For old and young, rich and poor, blond or brunet, there is a becoming cotton to be found.

At a Sunday School picnic in a rural community it was noticeable that the best little dresses were all of cotton. A silk somehow carried a last year's flavor. At a sub-deb dance, where every girl would almost as soon cease to exist as not to be gownned in the very latest, the lightness of organdy seemed to waft the wearers over the floor.

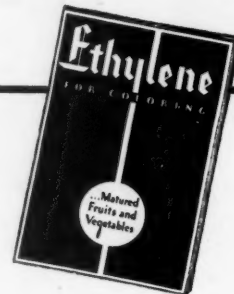
But is this enough? Not so, say the economists. What's the use of silken hose? Were not cotton stockings good enough for your grandmother? And those thingamy-bobs, few but essential, that you women wear under your cotton transparencies, why can't those be of cotton also? Yet every store we visit has mounds of silk underwear on display. If you'd all wear cotton slips and panties and long heavy cotton hose, the country would be saved.

"Please, Mr.," we stammer, "can't you see by our ankle socks that we're down on silk?" Alas! my sisters, are we quite honest with ourselves about this? Isn't the mere thought of a long cotton stocking a scratchy one? And yet, if fashion decrees the extinction of silk hosiery, wouldn't we prove the truth of the old saying that "pride feels no pain." Wouldn't we practice a little Christian Science and nobly ignore the hot, scratchy sensations.

We do really want to help, but all of us have a streak of the Old Adam (the old Eve I mean) that inclines us to fool ourselves as to the motive which leads us to wear long cotton dresses and shy away from long cotton stockings.

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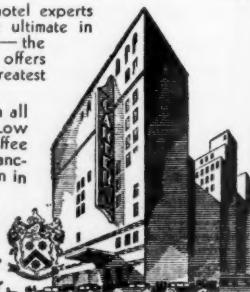
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Folsom B. Taylor
Managing Director

**CARTER HOTEL**

Meeting the New Lead Tolerance

(Continued from page 7)

as well as arsenic residues by means of a wetting or degumming material in combination with hydrochloric acid in a predip tank or homemade flotation washer is approximately $\frac{1}{2}$ cent per bushel, excluding cost of power, water and other incidentals.

Auxiliary wetting agents have been used most successfully in the home-made flotation type of washer. The constant agitation of the solution in most commercial washers which results in excessive foaming has caused minor difficulties in operation. Various defoaming agents are being tested in combination with the acid-wetting agent solution in an effort to prevent foaming.

Actual practice has shown it is possible to reduce lead and arsenical residues satisfactorily on oil-lead sprayed apples not matured to such an extent as to become greasy from wax formation, in a commercial type washer with the aid of a defoaming agent, allowing 50 to 60 seconds contact of the fruit with the acid-wetting agent solution, at a temperature of 70° F.

Excessively waxy oil-lead sprayed fruit may also be successfully cleaned in commercial washers if the temperature of the wash solution is maintained at 100° to 110° F. and the fruit allowed to remain in contact with the wash for at least 45 seconds.

During a period of seven months storage tests were conducted with all the late varieties of apples grown in New Jersey, previously washed in both homemade and commercial machines, using heated and unheated wetting agent-hydrochloric acid solutions. It was found that the keeping qualities of the fruit were unimpaired by this cleaning process.

Filter Juices for Higher Prices

Cider and other fruit juices sell more readily and at better prices if they are sparkling clear. Tests made by the Michigan Agricultural Experiment Station show that clarity increases consumer demand and that proper methods of filtering fruit juices are justified because they produce a product for which the public will pay a higher price. In this connection tests show that the Oozo Filter is highly successful in producing juices that are clear and sparkling.

Torch Keeps Orchard Healthy

Experience shows that orchards can be kept in a much healthier condition if the grass is burned away from the trees. This burning of grass and weeds destroys the lurking places of curculio and moths and eliminates mice runs, nests and other parasites. With the Aeroil "One Man" Portable Torch Outfit the task of keeping an orchard clean and sanitary is simple and inexpensive. This torch is of the "flat flame" nozzle type and burns kerosene oil. It is also handy for disinfecting poultry houses, livestock quarters and utensils.

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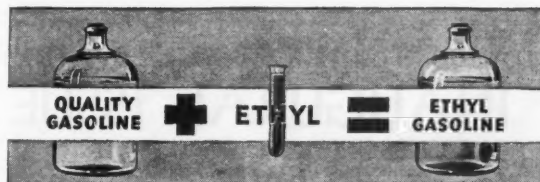
Inside the car engine, Ethyl fluid banishes harmful knock and sluggishness. It brings lost youth and power back to your motor. It gives you again the old thrill when you step on it!

These days, when we have to do without so many things, we *need* the pleasure our cars can give us. And even if you don't place dollars and

cents value on the *fun* of driving with Ethyl Gasoline, you'll make savings in lessened repair bills that *more* than offset the small extra cost.

Just remember: The next best thing to a brand new car is your present car with Ethyl. Ethyl Gasoline Corporation, New York City.

FOR SUMMER DRIVING: Warm weather aggravates the knocking evil. Knocking in turn causes further overheating, runs up repair bills and spoils summer trips. The Ethyl fluid in Ethyl Gasoline prevents harmful knock and thereby keeps the motor cooler. The hotter the day, the more you need Ethyl.



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You can get no finer coffee flavor in the cup than is in the coffee you buy. But there is one coffee you can always depend upon to be "always" delicious, "always" rich and mel-

low and sparkingly fresh. That coffee is Beech-Nut. For Beech-Nut is finest mountain-grown coffee, scientifically blended and roasted — then protected by modern high-vacuum tins.

Beech-Nut Coffee

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In 1910, "Black Leaf 40," containing 40% nicotine, was introduced. Fruit growers were quick to appreciate its superiority. Government and State Experiment Stations made thousands of exhaustive tests. As a result, the problem of a safe, effective and economical control for many insects was solved. Don't spare "Black Leaf 40" and spoil fruit. Sold everywhere. Write us for spraying data and other information.

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NORTHWEST REMOVING MANY BEARING TREES

MORE than 150,000 bearing apple trees in North Central Washington were removed this spring, according to a survey recently completed by County Agent A. R. Chase, reports the Wenatchee Daily World. At 60 trees to the acre this would be 2,500 acres, were the trees in one solid block.

A portion of this is accounted for in removal of entire orchards. Another percentage is better spacing of orchards which should start the trend of quality production upward. A considerable portion of tree removal is that resulting from elimination of odd varieties.

Chase made a cross section survey of 251 orchardists in the district, having a total of 160,921 trees. Of this number 13,630 trees had been removed, the rate of removal being between eight and nine per cent since last harvest.

Of the varieties removed 10 per cent were Jonathan, 12 per cent Stayman, 15 per cent Spitzenberg, 11 per cent Delicious, 24 per cent Winesap, five per cent Rome Beauty and eight per cent Winter Banana. The remainder was all other mixed varieties.

Few Delicious Out

Indications point to the fact that very few Delicious are being removed. Winesap are being taken out in orchards that are closely crowded and occasionally in solid blocks, although this is not a general trend in the district.

The Stayman, Winesap and Spitzenberg, continue to show a heavy removal. At this rate in a very few seasons these varieties will be insignificant in the valley. Jonathan are being removed to a considerable extent in the upper cooler districts, such is also the case of the Winter Banana. In a number of instances the Winter Banana are being grafted over to Delicious. The Rome Beauty apple is not being removed very rapidly. All of the odd varieties, considering their comparative lesser importance, are being removed in the orchards at quite a rapid rate.

Results of this survey thus far indicate that all of the varieties except the four main varieties of Delicious, Winesap, Rome Beauty and Jonathan are quite largely being eliminated. Plantings during the past few years have been largely Delicious. Car loadings of Delicious from the Wenatchee district will continue to increase in biennial periods and favorable years the production of this variety will soon surpass the production of Winesap. It is quite probable that the peak production of Winesap has been reached while the peak production of Delicious will probably come about 1940.

MODERN PACKAGING

(Continued from page 8)

handle Golden Delicious apples because the market did not offer these apples packed in paperboard boxes, but only in wooden boxes. Rather than run the risk of being forced to offer their trade bruised apples, or take a large spoilage loss, this store declined to handle them until paperboard packages with the fruits packed individually in nests reappeared on the market.

Growers and shippers of strawberries and tomatoes are alive to the sales power of the paperboard package. Both these products appear in the markets now in packages of convenient size for the household buyer and with eye appeal that greatly enhances the natural beauty of the products. Cellophane wrappings as now used on boxed strawberries permit the berries almost to sell themselves, because of the protected display of their unbruised beauty. A cellophane berry wrap of this type affords 100 per cent transparency for display of the fruit as well as 100 per cent protection of their freshness and appearance. It also allows easy, complete inspection on the part of purchasers.

SUMMER MEETING

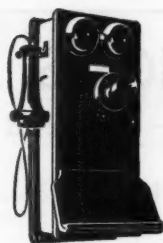
Two summer meetings for fruit growers have been planned by the Ohio State Horticultural Society, one August 11 in Fairfield County, and the other August 17 in Jefferson County. A tour to the Lutz, Hoffman and Ochs orchards in Fairfield County with lunch at the Ochs storage is arranged, while W. J. Welday at Smithfield will entertain the growers August 17. Orchard Day at the Ohio Experiment Station will be the following day.

The Pennsylvania Horticultural Association has accepted the invitation of the Department of Horticulture to hold its summer meeting at State College, August 7 and 8.

The tests in the old Experiment Orchard at the College have now been continued for 25 years. It is expected that some of these experiments will be changed by another year so this meeting was arranged to give the fruit growers of the State another opportunity to study this orchard before these changes are made. The Pennsylvania Association has invited the horticultural associations of the near-by States to join with it in this inspection.

The Blueberry Day and Orchard Tour of the Michigan State Horticultural Society will be held July 19 and 20. The first day members and friends will meet at the South Haven Experiment Station. They will then visit the 10 acre experiment planting and other blueberry plantings during the day. The second day, Orchard Day, a full program of visits to famous orchards is planned. On August 24 the Ohio State Horticultural Market Tour to the Benton Harbor Market will be held.

On August 12 the New Jersey Horticultural Society Meeting and Tour will be held in Cumberland County, N. J. Members will meet at Seabrook Orchards, Bridgeton, N. J., at 10:30 A. M., Daylight Saving Time.



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She relates many ways in which the telephone aids her. She telephones for market quotations on livestock and feed. She once saved six calves and a valuable purebred bull from black leg by telephoning quickly for a veterinarian. In church work, the telephone keeps her in close touch with fellow members.

These are only a few of the many, many ways in which the telephone is helpful on the farm. Think of how it aids you — keeps you in contact with children when they are away from home — summons aid in time of urgent need. The telephone does a big job in the day by day life of the farm. It is priceless in emergencies.

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QUESTIONS AND COMMENT

Conducted by T. J. TALBERT

Questions on fruit growing problems and on general horticulture will be answered through this department if of general interest. For reply by mail enclose 3c stamped envelope (air mail 8c). Address AMERICAN FRUIT GROWER, 1370 Ontario Street, Cleveland, Ohio.

Apple Scab

I am sending you a package containing some leaves taken from my orchards. These leaves are covered with brownish spots and some of the leaves have turned brown all along the edges. All varieties are affected.

Please tell me what is wrong and what I should do for the trees. The growth on the young trees is rather weak and willowy. Young trees are all under cultivation.—C. J. K., Illinois.

An examination of the leaves which you sent from your orchard shows that they are badly infected by the fungous disease known as apple scab. It is, as you know, too late to prevent the damage which has already been done to the foliage and fruit.

Since this disease can be controlled in a satisfactory way by timely and proper spraying, beginning early in the spring, it is important that you plan your orchard work in such a way as to control the disease next year.

It is suggested, therefore, that you apply the delayed dormant spray just as growth is starting, if there is any likelihood that the trees are infested by San Jose scale.

This dormant application may consist of lime-sulphur solution 1-7 or oil emulsion in Bordeaux 3-4-50. Either one of these sprays will control scale and assist in the control of apple scab.

Following the dormant application, using lime-sulphur at the rate of about one and one-fourth gallons to 50 gallons of water plus one pound arsenate of lead, apply the cluster bud spray.

Following the cluster bud application, the calyx spray, or blossom-fall application, should be made when about two-thirds of the petals have dropped, using the same spray chemicals at the same dilution as for the cluster bud spray. It is important that the petal fall and cluster bud sprays be made timely and very thoroughly, if apple scab is to be controlled successfully.

Following the petal fall spray, you should plan to continue your spraying work, using lime-sulphur as the third cover spray in about 10 to 14 days after the petal fall spray. If apple blotch is present in the orchard, it would be well to change to Bordeaux 2-4-100 plus about three pounds of arsenate of lead for all later applications. For best results the spraying work should be continued, applying the sprays at intervals of about 12 to 14 days apart up until within four or five weeks of harvest time.

For local conditions and the changing of the spray schedule and chemicals to meet them for best results it is suggested that you make special inquiry to your own agricultural experiment station at Urbana, Ill.

Water Core

Can you tell me any way to prevent my Delicious apples from having watery core or sometimes watery streaks running through them?—C. H. G., Massachusetts.

Some varieties of apples are much more susceptible to the condition known as water core than others; for example, the Early Harvest, Yellow Transparent, Rambo, Tompkin's King, and others are generally much more susceptible to the malady than the Delicious.

It seems certain that water core is not due to an attack of fungi, bacteria, or insects. Conditions affecting transpiration are generally considered of greatest importance in inducing water core. Moreover, it is believed that there is no one factor which may be entirely responsible for the disease. The best evidence seems to show that two or more causes are generally necessary.

No one has yet found a method of wholly preventing water core. The nutritional condition of the tree, the rainfall, cultivation, fertilization, and other factors may play an important role.

It is advisable to practice the best known methods of orcharding and to pick the fruit as near the proper time as possible, considering its maturity, color, and size. Furthermore, the fruit should be handled carefully and placed in clean, cool storage at the earliest possible date after harvesting.

Fusarium Wilt of Melons

About the time my sugar melons begin to set the vines wither and die. What is the cause of this and what is the remedy?

My ground in places is perforated by moles. They tunnel all through it and kill whatever I try to raise on it. How can I get rid of the "measly" pests?—T. R., Ohio.

In all probability the cause for your sugar melons wilting and dying is due to an attack of the fusarium wilt. This is a serious and difficult disease to control.

If the soil once becomes infected by growing wilting plants, melons should not be grown on the same soil for a period of 10 to 12 years. Resistant varieties offer a solution of the problem, and it is important to start with clean seed and grow it on land which has not grown wilted plants.

It is generally advisable to treat melon seed against the wilt disease. Corrosive sublimate one ounce to 7.5 gallons of water may be used as a disinfectant. The seeds are soaked in this five to seven minutes, after which they are thoroughly washed in running water. Seeds may be planted wet or dried carefully. Formaldehyde one part to 200 parts of water may also be employed, the seed being soaked one and one-half hours, after which it is dried and planted.

Moles are generally controlled best through the proper and efficient use of mole traps.

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STRAWBERRY PLANTS—100 PREMIER, 100 DUNLAP, \$1.75 Prepaid. EUREKA PLANT FARM, MAPLEVIEW, NEW YORK.

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AN OPEN CHALLENGE

To Men Who Want To Make More Money

MOST men are so busy trying to make a living that they do not take the time to think about their future. They are full of physical energy—take the first job they can get, put their best efforts into it, but having no definite plan for getting ahead soon find themselves progressing slowly and receiving only meager returns for their efforts as the years go by.

This open challenge is addressed to men of all ages who have not found themselves. It is, for example, for the young fellow who wants to get ahead rapidly in business so that he can have money and a car of his own—get married perhaps, and have the luxuries of life while he is young enough to enjoy them—the man who won't be happy until he reaches that goal.

A FRESH CHANCE FOR REAL SUCCESS

Would you like to know how others with no better start than you are getting ahead these days? Some are becoming Master Salesmen, others are learning to be Certified Public Accountants; still others are preparing for good positions as Executives, Expert Letter Writers, etc. They are learning to do the things for which modern business pays the biggest salaries.

If you would like to win success in the Sales end of business, then I am sure you will enjoy reading what Mr. C. Bain of Des Moines, Iowa, writes:

"I was a shipping clerk receiving \$15.00 per week, and had no future prospects of making any more money when a friend told me about the N. S. T. A. and what it was doing for him. Believing I had everything to gain, I enrolled for Salesmanship Training. I am now road salesman for my Company at a good salary and expenses—a bonus at the end of the year, and a new automobile furnished to travel my territory.

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Thousands of men are quickly qualifying for good paying positions in wholesale, retail, or specialty selling organizations. Many are employed by firms that pay all expenses including a car, or railroad transportation. Others are selling their way to the top of local companies becoming high-salaried sales managers, branch managers, and important executives as the result of knowing the successful, present-day methods of leaders in the selling field.

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